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ABSTRACT

The components of an educational program, designed to ensure the attainment of specific objectives, are described. Program objectives included the introduction of a new individualized instructional system operating within the same constraints experienced by public school staff, insurance that each child in the program would receive his fair share of instruction, and insurance that children would be validly measured on criterion and norm referenced tests. The effectiveness of the program's components in attaining these objectives is discussed. Observations concerning the efficiency of performance contracting as a procedure for bringing about change also are presented. (Author)

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AN ANALYSIS OF A GUARANTEED ACHIEVEMENT PROGRAM TO ACHIEVE SPECIFIC EDUCATIONAL OBJECTIVES, OR PERFORMANCE CONTRACTING, CHICAGO STYLE

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AN ANALYSIS OF A GUARANTEED ACHIEVEMENT PROGRAM TO ACHIEVE SPECIFIC EDUCATIONAL OBJECTIVES, OR PERFORMANCE CONTRACTING, CHICAGO STYLE

When we in the Chicago Public Schools embarked on a performance contract program, it was with the intent of designing a program to achieve certain specific goals within the constraints of our large city school system. This paper is an attempt to offer judgments concerning the effectiveness of the program in meeting the desired goals.

The program was designed (a) to improve the reading skills of innercity pupils, (b) to avoid the pitfalls reported in early performance contract programs, (c) to be one which could be continued by the public schools, and (d) to be satisfactory to various interested groups, including community residents, the general public as represented by the Board of Education, personnel at several administrative levels, teachers and the Chicago Teachers Union, and the funding Model Cities Agency.

The last goal stated above was attained to a large degree through the creation of a Performance Contract Management Committee. This committee, which was appointed by the General Superintendent of Schools and received his continuing support, functioned particularly during the planning and proposal review stages, but it has continued to function throughout the life of the performance contract program. Participation of the community was enhanced because the project was funded by the Chicago Model Cities Agency which includes mechanisms for community participation in planning and review. The Performance

Contract Management Committee, chaired by the Associate Superintendent for Educational Program Planning, consisted of two board members, community representatives from each of the four Model Cities Target Areas, a Model Cities staff representative, a teachers' union representative, two principals and two district superintendents of schools in which the program was to take place, the three area associate superintendents, and several central office staff such as the administrator of Board of Education Model Cities Programs and the Director of Research. Although the committee was large enough to have been potentially unwieldy, in practice this was not the case, partly because much important work such as preparation of the Request For Proposals (RFP) and detailed reviewing of proposals was done by subcommittees. Most important, this comprehensive committee has achieved agreement between the various groups represented on what could have been a very controversial program.

The first three goals stated above are recast in terms of the objectives which appear below. Each statement of an objective will be followed by a description of those provisions of the program which were designed to achieve the objective, which will be followed in turn by an attempt to describe the success of these program provisions.[1]

Objective: To introduce a new instructional system, with financial risk to be assumed by an independent contractor, which (a) would operate within the same constraints as those experienced by public school staff and (b) could be "turnkeyed" to the schools.

[1]Although some of the data contained in the sections which follow have not been previously reported, most of the results are drawn from the "Final Evaluation-Chicago Model Cities Performance Contracting Reading Project" prepared by the Institute for the Development of Educational Auditing (I.D.E.A.), the evaluation/auditing contractor retained for this program.

To achieve this objective a performance contract was entered into with Learning Research Associates (LRA) of New York to teach reading for one hour per day to approximately 1800 children in thirteen "Centers for Accelerated Learning" located in ten Model Cities Target Area schools. The awarding of the contract was preceeded by solicitation and evaluation of proposals received as the result of a Request For Proposals (RFP), followed by lengthy negotiation with the contractor. The evaluation of proposals by the committee focused on the extent to which the instructional system was individualized, cost effective, not overly dependent on expensive equipment or remodeling, and on an estimate of its potential for continued acceptance and use by classroom teachers. The contract provided for payment to the contractor to be based only on the reading achievement of children as measured by norm-referenced and criterion-referenced tests, while making the contractor responsible for virtually all instructional expenses associated with the program. In addition, the contractor was required to (a) utilize public school teachers from the schools as his on-site staff following Board of Education and union-agreed-upon-procedures (b) work with all children in a classroom, and (c) through inservice and on-the-job training enable the teaching staff to develop the expertise to continue the instructional program.

The evidence clearly indicates that "a new instructional system" has been introduced into the ten schools. The program was closely monitored by a representative of the evaluation/auditing contractor who spent one day in each center every thirteen days.

The reports which were produced clearly indicated that the center teachers utilized the individualized LRA reading system almost exclusively in instruction in the reading centers and that during the course of the year most of the classroom teachers who came with their classes to the centers also became proficient in their use of the LRA individualized system. Indeed, according to the reports, most of the pupils became proficient in many aspects of the individualized system as well.

Further evidence that "a new instructional system" has been introduced is offered by an analysis of pupil activities utilizing structured observations in the centers.[2] The results of these observations are presented in Table 1 and, for comparison purposes, the results of observations in all classrooms in seven other target area schools, which themselves had been attempting to move toward greater individualization of instruction, are presented in Tables 2 and 3. While the reader may find many of the observations of interest, the most direct comparison of the observations in the performance contract and comparison classrooms is to be found between the last column of Table 1 and the first column of Table 3. Particularly noteworthy are the more than 50% of pupils engaged in "Independent Involvement with Materials" in the performance contract schools compared to about 24% in the other schools and the 6% of pupils engaged in "Teacher-Directed Group Instruction-Two or More" in the performance contract schools compared to about 44% in the other schools. Of further interest is

[2]The observation form used was adapted by the research and evaluation staff from a form devised by Lindvall, Yeager, Wang, and Wood included in "A Comparative Investigation of the Efficiency of Two Classroom Observational Methods" by Mary Ann Kissel, a doctoral dissertation, University of Pittsburgh, 1970. Copies of the adapted form and lists of activities to be included in each category are available from the author of this paper upon request.

TABLE 1

Observations of activities of individual pupils in all Performance Contract Program Centers

(Total pupil observations were: Primary=3610, Intermediate=5300)

Type of Instruction	Primary Centers %	Intermediate Centers %	Composite of Primary & Intermediate Centers %
INDEPENDENT INVOLVEMENT WITH MATERIALS			
Using materials	46.5	45.1	45.5
Selecting materials	2.4	10.7	7.3
INDEPENDENT NON-INVOLVEMENT WITH MATERIALS			
Preparing for work or for change of work	11.2	9.0	9.8
Sitting w/no involvement of people or materials	4.0	3.6	3.7
Standing or moving about room aimlessly	.5	1.5	1.1
Out of room	.1	.4	.3
Waiting for help	.5	1.3	1.0
INTERACTION WITH PEER GROUP - TWO OR MORE			
Using materials - at least one pupil in group	4.1	6.9	5.8
Receiving or giving help w/selection of materials	3.7	1.5	2.4
Watching, talking, listening - no mtrls involved	1.6	2.3	2.0
Socializing or seeking to socialize playfully	3.4	6.6	5.3
Pushing, tapping hitting	.1	.2	.2
INTERACTION WITH TEACHER			
Watching, talking, listening - materials involved	5.2	5.5	5.4
Waiting for mtrls or prescript - teacher involved	2.6	2.7	2.7
Talking or listening - no materials involved	.6	1.0	.9
INTERACTION WITH TEACHER AIDE			
Waiting at aide's desk	.1	0	.1
Listening or talking to aide	.1	0	.1
TEACHER-DIRECTED GROUP INSTRUCTION - TWO OR MORE			
Listening or watching	7.0	.8	3.3
Talking - responding to instruction	3.3	.9	1.9
Using materials - teacher or pupil	3.0	0	1.2
Using materials - group assigned	0	0	0

TABLE 2

Observations of activities of individual pupils in all classrooms of seven schools included in a demonstration program other than the performance contract for the primary grades, grades four to eight, and other (PZ, IR, EMH, unclassified)

Type of Instruction	Grades 1-3	Grades 4-8	Others
INDEPENDENT INVOLVEMENT WITH MATERIALS			
Using materials	13.86	25.93	21.59
Selecting materials	.55	4.23	1.06
INDEPENDENT NON-INVOLVEMENT WITH MATERIALS			
Preparing for work or for change of work	7.64	5.66	5.74
Sitting w/no involvement of people or materials	3.71	3.84	1.73
Standing or moving about room aimlessly	.32	.52	.35
Out of room	2.45	.40	1.38
Waiting for help	.44	.53	.79
INTERACTION WITH PEER GROUP - TWO OR MORE			
Using materials - at least one pupil in group	4.31	7.57	7.98
Receiving or giving help w/selection of materials	.43	.69	.31
Watching, talking, listening - no mtrls involved	1.13	.85	1.26
Socializing or seeking to socialize playfully	1.18	3.37	.63
Pushing, tapping hitting	.04	.08	.04
INTERACTION WITH TEACHER			
Watching, talking, listening - materials involved	2.94	5.10	3.93
Waiting for mtrls or prescript - teacher involved	.84	1.08	.12
Talking or listening - no materials involved	.42	1.04	.24
INTERACTION WITH TEACHER AIDE			
Waiting at aide's desk	.50	.22	.90
Listening or talking to aide	3.74	1.21	8.14
TEACHER-DIRECTED GROUP INSTRUCTION -			
Listening or watching	14.15	13.18	16.63
Talking - responding to instruction	8.70	1.99	10.34
Using materials - teacher or pupil	14.03	7.49	10.62
Using materials - group assigned	18.61	15.02	6.21
Total	**100%**	**100%**	**100%**

[1] Entries indicate the percent of pupils within each grade level grouping observed to be engaged in the indicated activities.

TABLE 3

Observations of activities of individual pupils in all classrooms of seven schools included in a demonstration program other than performance contract for each subject area.

Type of Instruction	Reading	L.A.	Math	Sci.	S.S.	Art	Free Time	Special Act.	No Subj.
INDEPENDENT INVOLVEMENT WITH MATERIALS									
Using materials	22.73[1]	14.05	21.03	11.03	.65	33.11	17.35	16.85	32.9
Selecting materials	.85	.5	.69	.69	.52	.68	0	2.31	9.19
INDEPENDENT NON-INVOLVEMENT WITH MATERIALS									
Preparing for work or for change of work	5.72	6.06	8.20	2.07	4.95	9.8	0	8.32	7.34
Sitting w/no involvement of people or materials	3.68	3.06	2.22	6.21	2.22	10.81	0	2.31	5.04
Standing or moving about room aimlessly	.18	.33	.34	1.03	.13	.68	1.02	.40	.92
Out of room	2.89	.57	2.18	5.17	1.3	3.72	0	1.0	.12
Waiting for help	.31	.28	1.03	0	.26	0	0	.40	1.11
INTERACTION WITH PEER GROUP - TWO OR MORE									
Using materials - at least one pupil in group	6.64	3.56	7.09	2.07	3.52	6.76	60.2	12.94	7.34
Receiving or giving help w/selection of materials	.36	.39	1.19	0	.39	0	0	6.0	.61
Watching, talking listening - no mtrls involved	1.23	.89	.34	1.38	1.56	2.36	10.2	0	.89
Socializing or seeking to socialize playfully	1.48	1.52	1.00	8.62	.26	1.01	0	7.0	5.13
Pushing, tapping, hitting	0	0	.08	0	0	0	0	1.0	.25
INTERACTION WITH TEACHER									
Watching, talking, listening - materials involved	2.87	2.29	3.56	.69	12.65	6.42	0	8.53	6.05
Waiting for mtrls or prescript - teacher involved	.72	.44	1.11	.69	0	1.35	0	1.80	1.51
Talking or listening - no materials involved	.11	1.49	.31	0	.26	.68	0	1.0	.43
INTERACTION WITH TEACHER AIDE									
Waiting at aide's desk	1.05	.24	.5	0	.26	1.35	0	2.0	0
Listening or talking to aide	5.52	4.00	2.53	2.41	1.04	2.7	0	5.0	.71
TEACHER-DIRECTED GROUP INSTRUCTION - TWO OR MORE									
Listening or watching	13.69	14.3	16.39	28.28	33.38	0	11.22	17.35	6.61
Talking - responding to instruction	6.78	8.26	3.75	13.79	5.74	0	0	9.53	1.44
Using materials - teacher or pupil	9.56	16.07	10.92	4.33	8.74	0	0	15.05	2.33
Using materials - group assigned	13.6	21.69	15.05	11.03	22.16	18.58	0	0	9.59
Totals	100%	100%	100%	100%	100%	100%	100%	100%	100%

[1]Entries indicate the percent of pupils by subject observed to be engaged in the indicated activities.

the fact that in the performance contract centers while the pupil activity category of "Teacher-Directed Group Instruction-Two or More" contains about 13% of the primary pupil observations, it contains less than 2% of the intermediate pupil observations.

The phrase "with financial risk to be assumed by an independent contractor" embodied the notion that if the program were "successful" the contractor would get full pay, if"unsuccessful" he would get nothing while bearing all expenses. Complete success was defined by the negotiated payment scale, with some most-able individual children being expected to gain 2.5 grade equivalents and master as many as 50 reading objectives in a year's instruction. Complete lack of success, as implied in the payment scale, was that children would do no better than an estimate of their previous achievement, for instance that some less-able children would gain no more than .6 grade equivalents or would master fewer than 10 reading objectives in a year of instruction.

The program as funded by the Model Cities Agency, was supplementary to the regular expenses in the public schools, and the contractor could only receive payment based on the test gains which, as seen above, would be greater than those which would have been otherwise expected of the children in the program. The maximum to be received per child was $223.00 and the maximum to be received for all children was $400,000.00. In return the contractor guaranteed to pay for (a) the salaries of the fifteen public school teachers utilized full time in the program, (b) most of the furniture and equipment utilized, (c) the materials, and (d) the costs of training teachers in the use of the instructional system, other than teacher pay for "inservice" overtime. Preliminary calculations indicate that the contractor's out-of-

pocket expenses in Chicago have approximated $265,000.00, while the amount earned on test scores approximates $150,000.00 and the amount which the Board of Education is committed to pay for furniture, equipment, and materials approximates $50,000.00. This financial plight of the contractor has come about in some degree because of very optimistic bidding on hoped-for achievement of children.

Because payment was calculated for each child in the program and because most children did achieve in the expected range on criterion referenced tests, the contractor did earn the approximate $150,000.00 based on testing, even though the mean standardized achievement test scores were in the lower part of the range bid for individuals and were not appreciably different from test score means in control schools. In my judgment, determining the success of a program solely on first year test results probably offers an unneccessarily severe measure, and does not take into consideration the almost inevitable start-up problems. The question of whether the program is "successful" can be better answered after a second year of operation. In any case the performance contract as agreed upon has resulted in the instructional contractor assuming a large part of the financial risk.

The desire to have the performance contractor "operate within the same constraints as those experienced by the public school staff" was directly related to the desire to be able to have the program continue after the expiration of the contract. In general the program has operated under the general public school constraints, except that materials were more expeditiously secured at the onset by the contractor than they could have been by the schools, which was very helpful. In a larger sense the supplemental nature of the funding

violates the notion of "operating within constraints" and, as support is withdrawn for reasons unrelated to the success of the program, this may prove fatal. Operating within the constraints has helped to insure a high degree of teacher morale and acceptance, which is admittedly somewhat higher for center teachers than for classroom teachers.

Whether the program can be effectively "turnkeyed" is currently being tested. As long as supplementary funding is maintained it is apparent that the public schools can, and are, maintaining about the same program in the second year which the contractor instituted in the first year. If supplementary funds completely disappear, the main residuals will probably be the skills and insights of individual teachers in schools which will be hard pressed to come up with the necessary funds for the relatively expensive instructional management system and materials, and which will face problems of shared-use or dismantling of the attractive and well equipped reading centers.

Objective: To insure that each child included in the program would recieve his "fair share" of individualized instruction.

To achieve this objective a payment scale based on the achievement of each child as an individual was negotiated. This scale was also graduated, so that the child who was most able had to achieve more than a less able child for the contractor to achieve full payment. Furthermore, a portion of the payment was to be held for a year after the conclusion of the program to insure that children retained any benefits received. Further, the probability that the objective would be met was thought to be enhanced by providing that center

teachers and field consultants would be Chicago Public School teachers.

There is no indication that any child or group of children systematically received attention to the exclusion of any other children in the program and there is considerable evidence which indicates that children did receive individual attention according to their needs. This evidence consists in part of observations on and reports by those in the centers, but the most compelling evidence is the record of objectives mastered by individual children. In the intermediate centers there was no correlation between the number of objectives mastered by children, which averaged approximately thirty during the year, and the gains achieved on the standardized tests. This is probably not only related to the fact that lower level objectives are less time consuming, but also to a practice of center teachers of tailoring the prescription for each child so that he or she would be mastering an objective almost weekly.

In retrospect, some of the provisions for sliding payment scales for individual children seem to have been more elaborate than necessary to insure attainment of this objective. As with any prevention system, it is difficult to estimate effectiveness in the absence of that which is to be prevented. Conceivably the effect could have occurred by the inclusion of such provisions in the RFP. To my knowledge, there has been no hint, and very little possibility, of LRA altering instruction to influence payments.

Objective: To insure that pupils' progress in reading was validly measured through the use of (a) criterion referenced and (b) norm referenced tests.

To achieve this objective the testing program incorporated the following features:

(a) criterion referenced testing was based on the day to day diagnostic and check test program built into the instructional system, with the auditing contractor randomly retesting children on the attainment of objectives in each center on a continuing basis

(b) two standardized reading tests were administered to each child at reading level rather than at grade level on a pre-posttest basis.

It became apparent in the planning stages that attempting to administer an all inclusive criterion referenced pre and posttest, or alternately, to tailor a criterion referenced pre and posttest test for each child, offered insurmountable logistical problems. At the same time it was realized that criterion referenced pre and posttests were imbedded in the instructional system. These tests were utilized with randomly sampled children being rechecked by the evaluation auditing contractor, with penalties being assessed against criterion referenced test payments for discrepancies greater than ten percent between the findings of the evaluator and the center teacher. Seven centers achieved the 90 percent or better agreement, with the remaining 6 achieving between 80 and 89 percent agreement. Feedback from the evaluator seemed to be particularly helpful in bringing greater agreement as the program progressed. The tests described were individually administered and usually consisted of ten or fewer items, with mastery defined as 80 percent correct.

The above information speaks more to the reliability than to the validity of the criterion referenced tests. The pre, post, and check tests for the 230 objectives generally appeared to have face validity, and were certified as such by the auditing/evaluation contractor. There was no evidence from the instructional contractor that the tests had ever been submitted to any empirical test analysis other than continued use in the program. Under such circumstances the user is left with fewer assurances concerning validity, and reliability, than would be possible with more rigorous test construtions.

The method of administration of the standardized achievement tests seems to have insured that pupils in the program were validly measured, particularly in the intermediate grades. In order to test at reading level rather than at grade level, children were retested using a different level of the test if they scored fewer than 25 percent or more than 90 percent of the items correctly. When this correct level of the test was determined for the Metropolitan Reading Test, 1970 Edition, the Iowa Test of Basic Skills Reading Test was administered at the indicated level. Agreed-upon procedures called for using, where possible, only those test scores in the 25 to 90 percent range, and where possible, utilizing the mean of scores from the two tests. Two other provisions helped to insure that test results would be valid indices of achievement. The auditing evaluation contractor examined all instructional materials to certify that they did not "teach to the test", and tests were to be administered by the auditing evaluation contractor. The pretests were administered by the contractors' personnel with classroom teachers present. Due to some reports of "non-standard" test administration by some teachers,

by mutual agreement the posttests were administered by classroom teachers with monitors being supplied by the auditing/evaluation contractor. Because the instructional contractor challenged the posttesting conditions, the results of twelve testing sessions, out of approximately two hundred, were not used. The twelve cases consisted either of disruptive pupil behavior or of improper administration such as incorrect time limits. It seems fair to say that this testing was subjected to much closer scrutiny than would be the case in ordinary testing in the schools. Achievement test results are shown in Tables 4 and 5, on the basis of which the following conclusions are offered:

- There were no appreciable differences between the achievement and test gains of the project and control pupils. (ANCOVA, not shown, performed on intermediate scores did show statistically greater gains at the .05 level in three of the nine tests shown for intermediates.)

- Although the use of two tests offers reassurance in the present program, additional information offered is not such as to recommend the use of two tests in future programs.

- Testing at reading level seems to have insured that the children were accurately measured, and any additional problems with administration were accepted by both teachers and pupils. Probably as a result of testing at reading level, it is interesting to note that reported fifth grade gains are greater than fourth grade gains and sixth grade gains are higher still, a pattern that has not often been found in studies on inner city pupils.

TABLE 4

Posttest scores of Primary 1 pupils on Metropolitan Reading Achievement Tests, 1970 Edition.

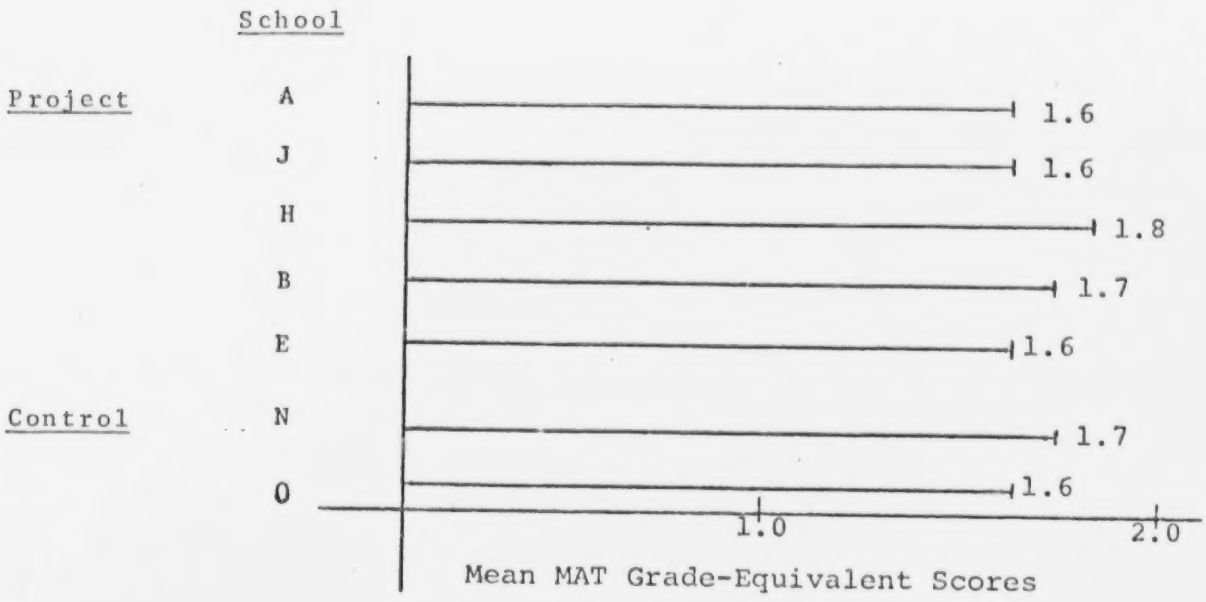
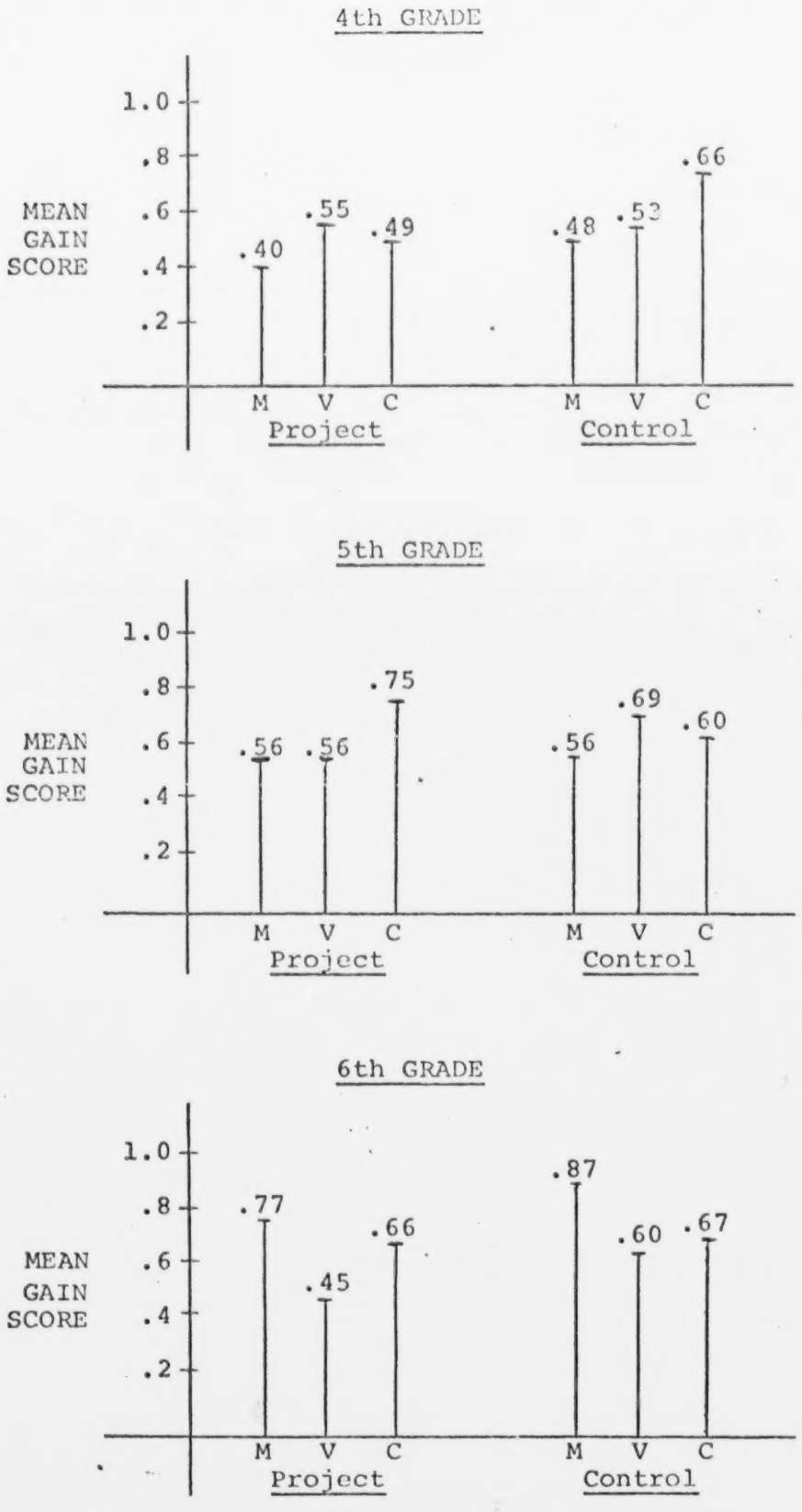


TABLE 5

Grade equivalent gains of intermediate pupils.*



*M = Metropolitan total Reading Achievement Test Scores, 1970 Edition
V = Vocabulary scores on Iowa Test of Basic Skills
C = Comprehension scores on Iowa Test of Basic Skills

Final Observations

The performance contract program was demonstrably successful in introducing a new individualized reading system into the Chicago schools. The individualized reading system has been accepted and is being used daily by teachers and pupils. Whether this system will be more effective than other methods cannot be answered on the basis of the results of achievement testing to date. Despite start-up problems, which made for less than a full year of actual experience with the new system, the children in the project did about as well as those in the control schools. Based on these considerations, it was decided to continue the instructional program, but not the performance contract, for another year in order to determine the effectiveness of the reading system.

Based on the Chicago experience, several advantages of the performance contract process may be identified:

(a) The Board of Education and staff are very interested in establishing a critical and thorough evaluation which will determine the value of a performance contract - perhaps more than with some "in-house" programs.

(b) The low price paid for services received reflects the competitive bidding.

(c) The independent contractor brings an urgency to the process of educational change which tends to be understood by the staff.

These advantages must be balanced against some real costs:

(a) The usual RFP-selection-negotiation procedure for securing a contractor is quite time consuming if done thoroughly, as are the calculations, and sometimes negotiations, which are necessary to determine the payment. If a management consultant contractor is employed some, but by no means all, of these costs will be made explicit.

(b) The economies of scale which would be available if the school district engaged in many such contracts are not generally available.

(c) Teachers may be resistant to full participation because of antagonism to the contractors' profit motive.

An alternative to performance contracting which retains some of the advantages while reducing some of the costs is available. This is to retain a contractor to introduce a new system, as the result of an RFP and selection process, without making payment to him contingent on pupil achievement. The contractor's pay would still be contingent on the performance of his agreed-upon services, and if evaluation is carefully built into the program his ability to stay in business could well depend on the outcome. Furthermore, some portion of the staff energies which would go into payment scale negotiations could be redirected beneficially toward helping recipient schools to be receptive initially. With equal interest and support, this alternative may well provide as high or higher level of performance without a performance contract.